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ABSTRACT

Trident Technical College developed a process using microcomputers to produce certificates for competency-based curricula. At the beginning of the process, criteria were set for the program. A software program was needed that used available computers, was easy to use, and produced a competency statement that was easy to read and interpret. A database management system, dBASE II, was chosen. A program was developed that: (1) uses data that instructors collect in evaluating students, (2) evaluates this data and assigns a skill level to competencies achieved in a given course of instruction, (3) stores data in student files, and (4) consolidates data, and lists competencies and skill level achievement for the student, in order to produce the competency certificate. (A schematic shows the basic pattern of the program. Appendixes, amounting to over one-half of the paper, include a user's guide that provides instructions on how to enter data to produce a competency certificate and shows the various menus and all of the products provided through the print menu.) (YLB)

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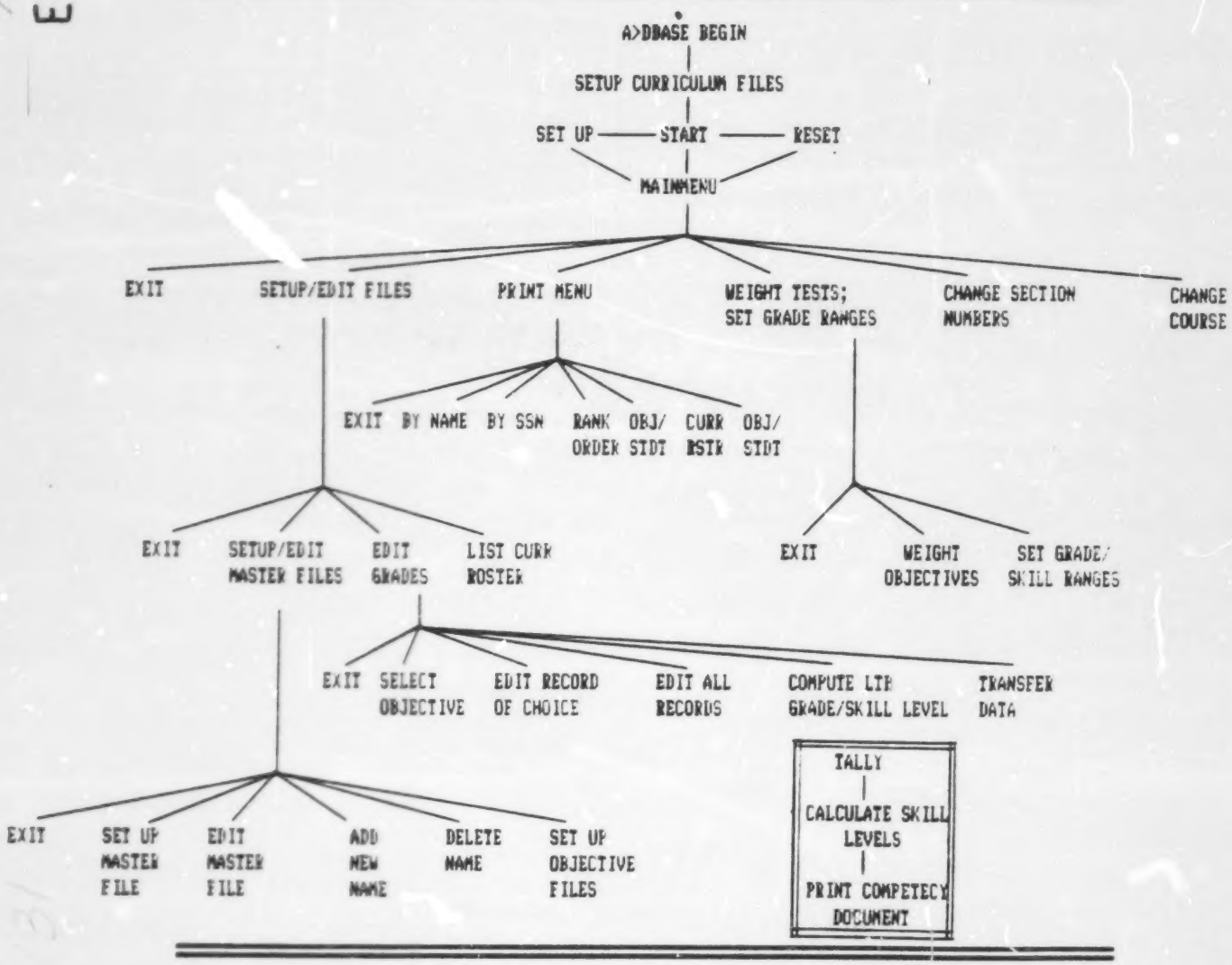
A COMPETENCY CERTIFICATE MODEL



for

microCOMPUTERS

by

Jack Tinius
Trident Technical College
Charleston, South Carolina
March 29, 1985

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USING MICROS TO PRODUCE COMPETENCY DOCUMENTS

INTRODUCTION

This paper presents a process developed at Trident Technical College under a Title III, Higher Education Act, Institutional Advancement Program (IAP) grant using microcomputers to produce certificates for competency based curriculi. It considers the need for competency certificates, the goals we established for creating the document, the computer program that we used to develop the process, the data needed for the process, and the products the program produces. Finally, we look at problems and some lessons we learned in the process. Attached to the paper are copies of the user guide, a copy of the program, and two program disks.

WHY COMPETENCY CERTIFICATES?

A competency certificate is more detailed than a traditional letter grade transcript in that it lists and rates specific objectives performed by a student in a given curriculum. (See example in Figure 1.) Even though the competency certificate may be based on similar or even the same data used to determine letter grades, it is most often the result of well thought out curriculum based on the DACUM (Developing A

TRIDENT TECHNICAL COLLEGE

7000 Rivers Avenue
Charleston, South Carolina 29405

Competency Skill Profile

STUDENT	SSN	CURRICULUM	DATE
		WELDING	03/22/85

OBJECTIVE	SKILL	SKILL LEVEL	DATE
B-05	Do Flux Cored Arc Welds on T-Jnts in Hor Pos	3	02/17/85
B-06	Do Gs Mtl Arc Wlds on T-Jnts--Hor/Ver Pos	4A	02/17/85
B-07	Do Gs Inastn Wlds on Stl/Alum Butt/T-Jnts--Flt/Hor/Ver Posit	2	02/17/85
B-09	Do Oxyct,in Welds on Butt Joints	2	02/17/85
I-03	Prepare Maintenance Records	2	12/14/84
I-04	Maintain Maintenance Records	2	12/14/84
K-01	Use Basic Math Skills	2	09/12/84
K-02	Make Math Conversions	2	09/12/84
K-03	Use Table and Charts	2	09/12/84
K-05	Apply Geometric Skills	2	09/12/84
K-07	Use Pocket Calculator	0	09/12/84
L-04	Use Proper Terminology	2	12/14/84
L-08	Give Oral Instructions	0	12/14/84
L-10	Prepare Technical Reports	0	12/14/84

----- THIS IS A PARTIAL PROFILE -----

RATING SCALE

4C - Can perform this skill satisfactorily and lead others in performing it.	4P - Can perform this skill satisfactorily with initiative and adaptability to special problem situations.
4A - Can perform this skill satisfactorily with more acceptable speed and quality.	3 - Can perform this skill satisfactorily without assistance and/or supervision.
2 - Can perform this skill satisfactorily, but requires periodic assistance and/or supervision.	1 - Can perform some parts of this skill satisfactorily, but needs assistance and/or supervision to perform entire skill.

0 - Skill not tested

TTC Quality . . . for the Student

Fig. 1 Sample Certificate

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Curriculum) process. This process and the certificate itself offer advantages for the student, the employer, and faculty and administration.

Students

If students in technical programs can show prospective employers a detailed account of skills they have mastered, their chances of finding a job suited to their education can improve. These documented skills will also provide employers with the "experience" a student has gained as a result of education. The certificate has the potential to break the Catch-22 cycle of no experience, no job . . . no job, no experience. Additionally, the competency certificate listing provides the student with a checklist of the competencies required by a given curriculum.

Employers

With a competency certificate, employers can more easily assess skills. The certificate lets them determine whether a person's qualifications match specific job requirements. It also serves as a quality control document. Employers can respond specifically as to the type and quality of training offered and taught by technical colleges.

Faculty and Adminstration

As a corollary of employer quality control, technical colleges can be more responsive to the demands of the market place. Through effective two-way communication, the competency certificate can be used to upgrade curricula to reflect local employment standards. The data the program

produces can provide administrators information for student tracking and instructor evaluation. The competency certificate can also help define and structure curriculum. If the implementation of the program and curriculum is well designed, the computerized grading aspect of the program can ease faculty workload.

Other Considerations

As with any new program, there will be a resistance to change. Computerized record keeping systems, because of the new technology involved, seem to suffer this resistance doubly. Initially, as with any computerized system, workload will increase because it is a prudent practice to maintain the manual record keeping system until the computerized system functions smoothly. If experience is any guide, these problems are worth overcoming for the potential benefits of greater speed and accuracy, accountability, and efficiency computerized processes offer.

PROGRAM DESIGN GOALS

At the beginning of this process, we set criteria for the program based on the current curriculum at Trident Tech and available resources. The College was in the process of acquiring Digital Equipment Corporation (DEC) computers. These ranged from DECmate II word processors and Rainbow microcomputers to two VAX/VMS minicomputers. Since the Rainbows were the most widely available system at the time, we decided to use those. The next step was to try to find a software program suitable to meet the following criteria:

-- It uses available computers.

-- The process is easy to use, i.e., it will be ultimately more efficient than the current record keeping system.

-- The product, the competency certificate, is easy to read and interpret by students, instructors, and employers.

-- The certificate reflects a positive, professional image for the College.

We first looked for an application program software designed to produce what we wanted. This search, although certainly not exhaustive, was not fruitful. Colleges we contacted that were using competency based systems were not any farther along toward a computerized competency certificate than we were. Next we asked our computer services department to evaluate our project and recommend a software package. They recommended using a data base management system (DBMS). Of the two available at the College, Condor and dBASE II, we chose dBASE II because we could program it for easier data entry.

Once we made this decision, we developed the following concepts for the program:

-- Users must be able to enter data at convenient locations.

-- With minimum training users can

--- start the program with a simple command

--- go through the program using menus

--- fill in blanks to enter data

--- easily edit mistakes

--- assign different values to test scores

--- set ranges for letter grades and skill levels

--- compute letter grades

--- compute skill levels

--- print copies of summary data and individual student records

-- Be able to store records centrally.

-- For easier evaluation, have competency certificate summarize achievement in major areas of the DACUM, display it graphically, with detailed accounting attached.

-- Have process accommodate the current grading system as a transitional phase.

-- Ensure ratings are legally sound and well documented.

-- Develop a secure system.

To acheive these worthy, but ambitious goals require a substantial commitment of resources. The remainder of this paper discusses the progress we have made toward achieving them so far.

DATA BASE MANAGEMENT SYSTEMS

Data base management systems process records within files then manipulate files to produce various kinds of information. Without going into laborious detail, these processes are often complex and time consuming. Consequently, any program design using a DBMS must be well thought out to take both DBMS capabilities and limitations into account. Data entry must be an efficient process. Time consuming updating and computation processes must come at a point in the program when the user can push a key and go do something else while the computer works its magic.

The usefulness of a DBMS is its ability to index data both alphabetically and by coded number and selectively process that data. Some of examples as they apply to this process would be to display student records by name or social security number, to list by student name competencies completed or not completed, to compile lists of students who had completed selected competencies, to ferret out competencies repeated over the course of a given curriculum, along with many other possibilities. A DBMS can call up information quickly (dBASE II can find one record out of 1000 in a few seconds); it can quickly and conveniently edit information, and can present this information in a variety of formats. DBASE II has the additional feature of making these processes relatively easy to perform through its programming language. However, as a general rule, the easier the procees is for the user, the more complex its design and program.

THE COMPETENCY CERTIFICATE PROGRAM

As a brief sketch, the program uses data instructors collect in the process of evaluating students both in classrooms and laboratories. The program evaluates this data and assigns a skill level to competencies achieved in a given course of instruction. If necessary, the program computes a course composite for traditional transcripts. This data is then stored in student files. When it comes time to produce the competency certificate, the program consolidates the data and lists the competencies and skill level achievement for the student.

Menus

The attached User's Guide shows the various menus used to work through the comptency certificate program. With minimum exposure and practice, the program is easy to use.

Schematic

The schematic in Figure 2 shows the basic pattern of the program. The main menu branches into major divisions: 1. a setup/edit menu that further branches to enter student rosters and competency performance data, 2. a print menu to produce a variety of products, and 3. a menu that allows the weighting of test scores and setting letter and skill level grade ranges. A separate program processes data from this user program for specific curricula and produces the competency certificate.

The program requires two disk drives. The program is on one disk; it controls data entry on a second data disk. This data disk must be set up with the various files (the first part of the schematic in Figure 2) that process the data necessary to produce the competency document. The data disk can accommodate about 800 records. Because of the way the program is organized, one student in a course that tests five different competencies would require six of these records plus additional space for index files. Thus, one course with six objectives could accomodate about 100 student records on one disk. Although these are small numbers for a dual disk

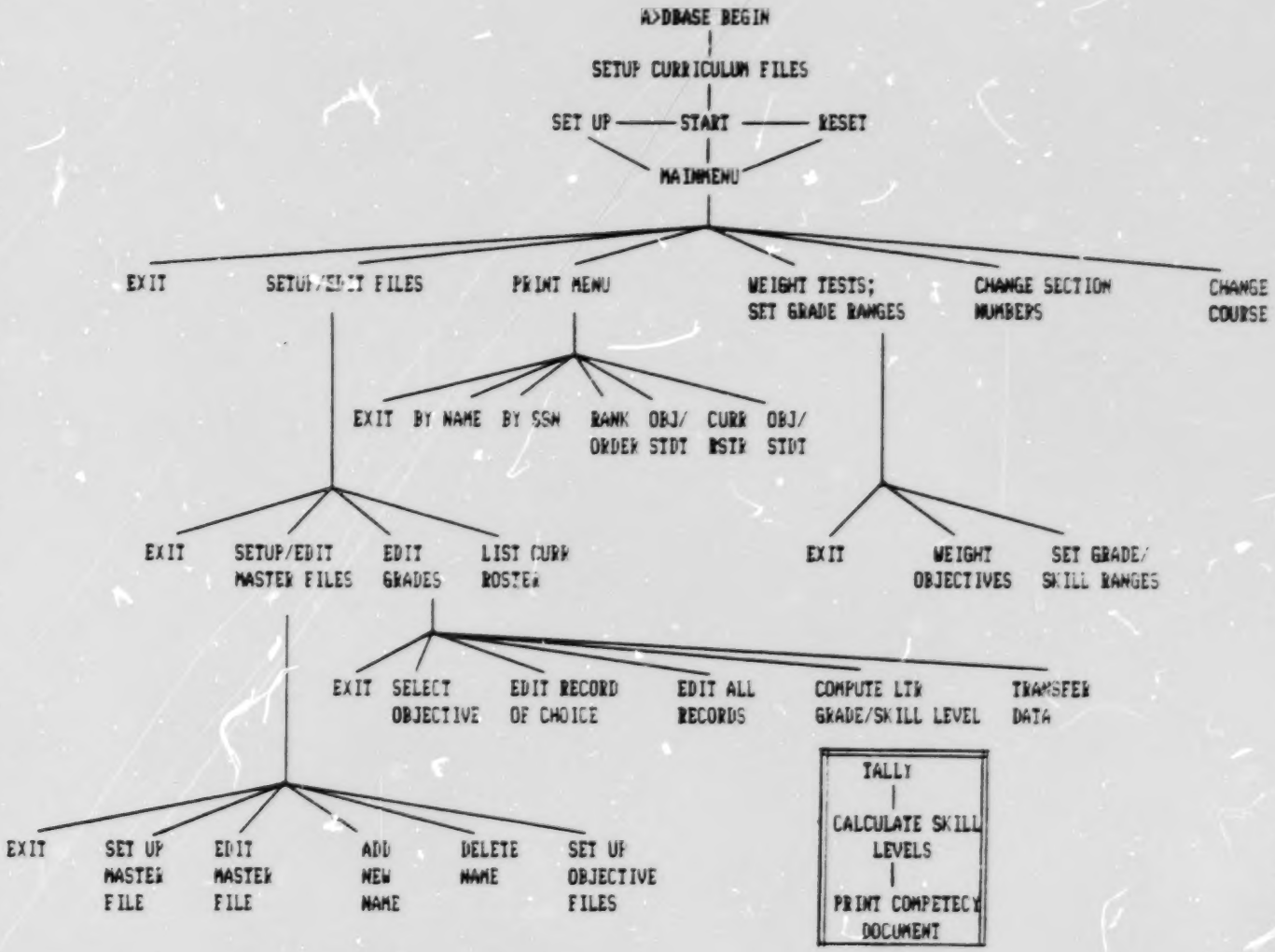

Fig. 3 Schematic

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drive computer, once data has been transferred to a central storage location, the disks can be reused.

The program in its current form uses the maximum number of fields available in a given data base file (32 for dBASE II). This number of fields can be decreased according to the demands of a given curriculum. This will increase the record storing capacity of the data disk. For example, the program as it is written accommodates twenty courses, each with twenty objectives. Each objective can use twenty different criteria or test scores to determine a student's achievement for a competency. For practical use, these numbers may be excessive.

Each curriculum program is custom designed for the user. This sets up competency and skill level descriptions to suit the user. Currently, competency and skill level descriptions must be entered by a programmer; however, further program development can make this a simpler process.

PROGRAM FLOW

The User's Guide details the steps necessary to get the program working. The following is a rough outline:

-- Establish curriculum files on data disk.

   Sets up a file for each course in a curriculum. Curriculum may be preset in the program or entered manually.

-- Enter date, quarter, course, section.

   This provides the program with the data needed to identify different courses and sections on the same data disk.

-- Enter names, ssn.

Builds a roster for selected course and section.

-- Establish objective files for course.

Each course has one or more objectives. A student's rating in a course objective transfers to a specific competency on the competency certificate. The student's rating in the course objective along with ratings in other course objectives make up the course composite. See Figure 3 for a diagram of this process.

THIS IS THE HEART OF THIS
COMPETENCY CERTIFICATE PROCESS.
YOU MUST DESIGN YOUR COURSES
AND RATING PROCEDURES TO WORK
IN HARMONY WITH THIS CONCEPT.

-- Enter grading/rating data.

As mentioned earlier, up to twenty test scores can be entered for each course objective.

-- Transfer data to course composite file.

All course objectives are weighted and computed into course composite. This data used for curricula requiring letter grades. This is also the file used to store data for the competency certificate.

-- Calculate composite grade for transcript and skill level.

Calculates letter grade based on ranges set in by user.

-- Transfer data to curriculum file.

The curriculum file lists all courses that provide data for the competency certificate. A course outside the specific discipline of the curriculum for example, an English or math course might be used for several curriculum files.

-- Print competency certificate.

This process should be done at a central data collection point. Here various curriculum files can be maintained, and the data more securely held.

PRODUCTS

All of the products provided through the print menu are in

Appendix B. These are not the only possibilities. Other data are relatively easy to produce using dBASE II commands. The competency certificate and its related products are produced at a central location.

CONCLUSION

We have just begun to field test this process; we are certain that weaknesses in its structure will surface. Past experience has shown that with perseverance, we can make changes that make the program work more smoothly.

One can only come to know the complexity of an undertaking like this through doing it . . . one moves from the widely accepted notion that computers can produce almost instantaneous results to the reality of the many mysteries and complexities of programming and the problems of integrating computer processes into the non-computerized workaday world we are most comfortable with.

The great lesson is that we cannot expect these fascinating and often frustrating machines to serve us without some sort of accommodation.

REFERENCES

dBASE II Reference Manual. Digital Equipment Corporation, 1983.

dBASE II User's Guide. Digital Equipment Corporation, 1983

Townsend, Carl. Using dBASE II. Berkeley, California: Osborne/McGraw-Hill, 1984.

My thanks to Betty Howe and Dr. Phyllis Myers of Trident Technical College for their help and advice on this project.

APPENDIX A

COMPETENCY CERTIFICATE PROGRAM

USER'S GUIDE

DEVELOPED FOR THE DIGITAL RAINBOW USING dBASE II

COMPETENCY CERTIFICATE

USER'S GUIDE

EQUIPMENT

A microcomputer with two disk drives, a minimum of 128K bytes of memory running the CP/M-86/80 operating system.

A compatable printer.

TO THE USER

This program uses menus designed to make it easy to follow. You must know basic microcomputer startup and disk loading procedures. This program runs on a DEC Rainbow. We have made every effort to stay away from computer jargon; however, it will take some time before you will be completely comfortable with the process.

The instructions in this Guide show you how to enter data that will be used to produce the competency certificate and a roster of letter grades. A separate program uses the data disk from this program to produce the competency cerificate.

THE PROGRAM

The program is designed to accommodate a curriculum that requires letter grades and competency ratings. An important goal in designing the process has been to decrease rather than increase the workload on Faculty. This feature has made the program more complex. The program has also been designed to make data entry as simple and efficient as possible. Microcomputer record keeping programs, partially due to limitations of disks, application software, and program design have built-in inefficiencies. Some aspects of the data entry process, most often batch processing, can be excruciatingly time consuming. This program is designed to assign batch processing to after a data entry sessions. For example, once you enter scores for a particular objective in a course, the process of tranferring this data to a master file is the last thing you do. The key making this program work efficiently is to keep data entry up-to-date over the course of an academic term.

CUSTOMIZED PRODUCT

The competency certificate is a product of skills demonstrated over the course of a given curriculum. Each course contains certain objectives that translate into competencies. The course may also contain objectives that do not translate into competencies, but contribute to a letter grade. For example, a course in welding may require the student demonstrate specific welds that are part of the competency document; however, the instructor may also grade on attendance, safety procedures, attitude, care of equipment, etc. that may or may not be part of the competency document. The user chooses what constitutes a competency document. As a result, you design the the final output of the program as well as the description of skill levels . Appendix A details this process.

GETTING STARTED

-- Load CP/M. (Program is too long for it and CP/M to be on one disk.)

-- Once the CP/M prompt A> is on the screen, remove the CP/M disk.

-- Put Competency Certificate Program in Drive A.

-- Put blank digital RX50K disk in Drive B.

-- Enter DBASE BEGIN.

-- The following screen will appear:

COMPETENCY CERTIFICATE

////////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\

SETUP COURSE FILES

////////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\

THIS PROGRAM SETS UP FILES FOR COURSES IN YOUR CURRICULUM. DO THIS THE FIRST TIME YOU USE THE PRO-GRAM AND WHEN YOU WISH TO SET UP A NEW FILE DISK.

FIRST TIME USERS: INSERT A BLANK, INITIALIZED DISK IN DRIVE B, PRESS AY KEY TO CONTINUE.

ALL OTHERS: PRESS ANY KEY FOR MENU.

WAITING

(Unless the program asks for a Yes or No response, press any key to continue when you see the WAITING prompt.)

NOTES

CHOOSING A CURRICULUM

The program begins with the user specifying a curriculum and setting up a formatted disk for that curriculum. This is a one time process. For this program, a curriculum can accommodate up to twenty courses, each with twenty objectives.

(This is a limitation of dBASE II; the number of courses can be expanded to about 50 by converting this program to run on dBASE III.)

COMPETENCY CERTIFICATE

////////////////////////////////////XXXXXXX\\

SETUP COURSE FILES

////////////////////////////////////XXXXXXX\\

1 SKIP TO STARTUP SCREEN
2 RESET COURSE FILES
3 ENTER COURSE DATA

SELECT OPTION 0-3
WAITING

SET UP CURRICULUM FILES

Choice 1 Skips to the startup screen if you are not a first time user.

Choice 2 Resets the course file for a given curriculum on a disk that is already in use. <u>This is a contingency process</u>. There is a possibility that the course listing on the disk's memory file may not come up. This choice will restore the file without losing other data.

Choice 3 Sets up files for a selected curriculum.

<u>NOTES</u>

The following screen is an example of a curriculum listing you use to set up course files. Choice 6 allows you to enter a course (or courses--up to twenty) and use the program as an electronic grade book.

COMPETENCY CERTIFICATE

////////////////////////////////////XXXXXXX\\

SETUP COURSE FILES

////////////////////////////////////XXXXXXX\\

ENTER CURRICULUM NUMBER

CHOICES:

1 DIESEL
2 INDUSTRIAL
3 AUTOMOTIVE
4 AIR COND/REFRIGERATION
5 WELDING
6 OTHER

SELECT OPTION 0-6
WAITING

NOTES

COMPETENCY LISTING

////////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\

STARTUP DATA

////////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\

DATE: 02/25/85
ENTER CURRENT TERM: WINTER
ENTER COURSE AND NUMBER: EGT 108
ENTER SECTION NUMBER: 1

STARTUP SCREEN

-- Turn on the shift or caps lock.
-- Fill in the blanks as shown.
Note: No need to put in slashes for the NOTES

```
////////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
     MAIN MENU                                                          02/13/85
                                                                        WINTER
                                                                        EGT 108 1
////////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\

                OPTIONS:
                        0 EXIT TO OPERATING SYSTEM
                        1 ENTER NAME AND GRADES
                        2 PRINT
                        3 WEIGHT OBJECTIVES; SET GRADE RANGES
                        4 CHANGE SECTION NUMBER
                        5 CHANGE COURSE NUMBER


WAITING
```

MAIN MENU SCREEN

The title line is repeated for each menu. It shows the menu title (MAIN MENU),the date (02/14/85), the term (WINTER), the course (EGT 108), and the section (1).

Choice 0 Returns you to operating system. This is an improtant step in that it closes any files that are open and ensures that all new data is stored on a disk. AVOID what hackers call a "crash" exit from this or any application program

Choice 1 Goes to the MASTER FILE EDIT MENU.

Choice 2 Goes to the REPORT MENU.
(These menus detailed later.)

Choice 3 This choice allows you to weight the value of the objectives and set grade ranges for letter grades and competencies.

Choice 4 and Choice 5 For more than one course and/or sections per data disk. (Determined by previous choices). Once a disk is formatted there are 250 kilobytes left for data. Each record uses just over 200 bytes; there's room for about 1000 records. For a further discussion of space allocation and file management, see Appendix B.

NOTES

COMPETENCY CERTIFICATE

```
////////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
SET MENU                                                              02/13/85
                                                                      WINTER
                                                                      EGT 108 1
////////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
```

OPTIONS:

0 EXIT TO MAIN MENU
1 ENTER NAMES, SSN
2 ENTER GRADES
3 LIST CURRENT ROSTER

SELECT OPTION 0-3
WAITING

Choice 0 Returns to MAIN MENU

Choice 1 Branches to MASTER FILE EDIT MENU where you enter, edit, add and delete student names and social security numbers. The MASTER FILE EDIT MENU also establishes the number of objectives in each course.

Choice 2 Branches to DATA ENTRY FILE where you enter student performance on the various objectives.

Choice 3 List the current roster for the course and section you entered earlier.

NOTES

COMPETENCY CERTIFICATE

```
//////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
     MASTER FILE EDIT MENU                                          02/13/85
                                                                    WINTER
                                                                    EGT 108 1
//////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
```

OPTIONS:

0 EXIT TO PREVIOUS MENU
1 ENTER NAMES, SSN
2 * EDIT RECORDS
3 * ADD NEW STUDENT
4 * DELETE A NAME
5 ** SETUP OBJECTIVE FILES

* THESE PROCESSES UPDATE AND INDEX SEVERAL RECORDS. THEY TAKE TIME.
** MUST GO THROUGH THIS PROCESS ONCE FOR EACH COURSE. IT TAKES ABOUT TWO MINUTES TO SETUP FILES FOR EACH COURSE OBJECTIVE.

WAITING

Choice 0 Exits to previous menu.

Choice 1 Branches to MASTER FILE PROGRAM. This is a fill in the blank program. Note that the program gives you two chances to make the correct entry. BE CAREFUL TO TAKE ADVANTAGE OF THIS OPPORTUNITY. Any later editing, additions, and deletions normally require the updating of several files--a time consuming process.

Choice 2 Allows you to edit an entire student record as it appears in the data base. This is the most efficient way to make several changes to a given record at one time, i.e., name, ssn, performance data.

Choice 3 Adds a new student. Updates all files for selected course and section.

Choice 4 Deletes a student. Updates all files for selected course and section.

Choice 5 Sets up objective files for selected course. Each file corresponds to a graded course objective. This is the <u>critical</u> next step after completeing Choice 1, MASTER FILE PROGRAM. You do this an initial step, once each term, before entering competency data.

<u>NOTES</u>

COMPETENCY CERTIFICATE

```
////////////////// ////////////////XXXXXXX\\\
```

Choice 5 Transfers data for this objective to the master file. Use this step when you wish to calculate up-to-date letter grades and at the end of the term to transfer the data for skill levels and grades to the master file.

Choice 6 Goes to letter grade menu which calculates a letter grade for the course or skill levels for selected objectives.

NOTES

COMPTENCY CERTIFICATE

```
////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
    WEIGHT OBJECTIVES                                          02/13/85
    SET LETTER GRADE RANGES                                    WINTER
    SET SKILL LEVELS                                           EGT 108 1
////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
```

OPTIONS:

0 EXIT TO PREVIOUS MENU
1 WEIGHT OBJECTIVES
2 SET GRADE RANGES AND SKILL LEVELS

WAITING

Choice 0 Exit to Main Menu

Choice 1 Weights objective for a given course. Use this for calculating letter grades. For example, a final examination might be worth more than a mid-term. If you wish, skill level objectives can also be weighted without altering their rating value on the competency certificate.

Choice 2 Asks for highest F score, then lowest D, C, B, A scores. Skill levels can be set at six different levels.

NOTES

COMPETENCY CERTIFICATE

```
////////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
    REPORT MENU                                                    02/13/85
                                                                   WINTER
                                                                   EGT 108 1
////////////////////////////////////XXXXXXX\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\

                OPTIONS:
                        0  EXIT TO MAIN MENU
                        1  PRINT SUMMARY REPORT BY NAME
                        2  PRINT SUMMARY REPORT BY SSN
                        3  PRINT IN RANK ORDER
                        4  PRINT CURRENT STUDENT ROSTER
                        5  DISPLAY STUDENT RECORD FOR COURSE OBJECTIVE
                        6  PRINT STUDENT RECORD FOR COURSE OBJECTIVE

    SELECT OPTION 0-6
    WAITING
```

This menu is mainly for letter grade and data review; however, it can also display skill levels and the data used to calculate them.

Choice 0 Exits to MAIN MENU

Choice 1 Will print up-to-date summary report for selected course and section.

Choice 2 Lists only SSN and letter grades.

Choice 3 Lists in ascending rank order and also calculate percentages of A's, B's, etc.

Choice 4 Hard copy of an individual student record by objective.

Choice 5 Hard copy of current roster for course and section.

Choice 6 Calls up individual student record for viewing on screen.

NOTES

APPENDIX A

Loading dBASE II on the Program Disk

The program requires two files from the dBASE II master disk: DBASE.CMD and DBASE0VR.COM. Use the PIP command to transfer these two files to the program disk. If you don't have a hard disk drive, this process requires a bit of manipulation. CHECK YOUR LICENSING AGREEMENT WITH YOUR SOFTWARE VENDOR BEFORE YOU MAKE COPIES FROM YOUR MASTER DISK . . . then take the following steps:

Step 1. Load CP/M into drive A.

Step 2. Put a blank formatted disk in drive B.

Step 3. At the A> prompt, type in SUBMIT SYSCOPY A: B:

Step 4. When that process is over, put the disk in drive B into drive A.

Step 5. Put the dBASE II disk in drive B.

Step 6. At the A> prompt, type in PIP A:DBASE.CMD=B:DBASE.CMD

Step 7. When that process is over, at the A> prompt type in A:DBASE0VR.COM=B:DBASE0VR.COM

Step 8. Remove the disk in drive B.

Step 9. Put the competency certificate program in drive B.

Step 10. At the A> prompt, type in PIP B:DBASE.CMD=A:DBASE.CMD

Step 11. When that process is over, at the A> prompt type in B:DBASE0VR.COM=A:DBASE0VR.CMD

Step 12. Remove the disk from drive A.

Step 13. Put the competency certificate program disk in drive A and a blank formatted disk in drive B. You are now ready to begin using the program.

NOTES

APPENDIX B

Setting up a Curriculum

You can design your own curriculum, or have one installed by a programmer. We suggest that to begin with, you install one yourself as an initial test of this competency certificate process.

Step 1 Follow the instructions at the beginning of this manual. When you reach the screen that asks for a curriculum number, select Choice 6, "Other".

Step 2 Enter the courses in the curriculum, up to a maximum of twenty.

Step 3 When you are finished, the program will initialize the disk in Drive B: When the program goes to the start screen, you may then enter any course in the curriculum and begin keeping student records.

You will now be generating data necessary to produce the competency certificate. The objectives you will use for each course relate directly to objectives specified in a separate program. It consolidates data from the several different courses in a curriculum to track a student's progress and produce the competency document.

NOTES

APPENDIX C

How the Program uses Files

The program sets up a file for each course in a curriculum. It then maintains a separate file for up to twenty objectives for each course. These separate objectives are then consolidated into a course composite. The program keeps track of the data by student name.

The program uses the course composite, and a custom designed program for each curriculum to produce the competency document.

The programs that produce data are on the program disk in drive A; the files are set up on the data disk in drive B. The programs needed to print the competency certificate are on a separate disk.

NOTES

APPENDIX B

COMPOSITE LISTING

////////////////////////////////XXXXXXX\\

Student Roster 03/27/85
WINTER
Course Summary WLD 102 1

////////////////////////////////XXXXXXX\\

NAME	SSN	COM-POSITE	GRD
		82	C
		84	C
		80	C
		98	A
		80	C
		82	C
		92	B
		80	C
		81	C

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COMPOSITE BY SSN

Student Roster by SSN — 03/27/85
WINTER
Course Summary — WLD 102 1

SSN	COM-POSITE	GRD
	82	C
	84	C
	80	C
	98	A
	80	C
	82	C
	92	B
	80	C
	81	C

BEST COPY AVAILABLE

Rank Order Roster

////////////////////////////////////XXXXXXX\\

Student Roster 03/27/85
WINTER
WLD 102 1

////////////////////////////////////XXXXXXX\\

NAME	SSN	COM-POSIT	GRD
		98	A
		90	B
		84	C
		82	C
		82	C
		81	C
		80	C
		80	C
		80	C

PERCENTAGES BY LETTER GRADE

A= 11%
B= 11%
C= 77%
D= 0%
F= 0%

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COMPETENCY LISTING

////////////////////////////////XXXXXXX\\

CURRENT RECORD

03/27/85
WINTER
WLD 102 1
OBJ 1

////////////////////////////////XXXXXXX\\

NAME:

TEST 1:	85.00	TEST 2:	74.00
TEST 3:	76.00	TEST 4:	88.00
TEST 5:	92.00	TEST 6:	0.00
TEST 7:	0.00	TEST 8:	0.00
TEST 9:	0.00	TEST 10:	0.00
TEST 11:	0.00	TEST 12:	0.00
TEST 13:	0.00	TEST 14:	0.00
TEST 15:	0.00	TEST 16:	0.00
TEST 17:	0.00	TEST 18:	0.00
TEST 19:	0.00	TEST 20:	0.00

COMPOSITE: 83.00 SKILL LEVEL: 1

COMPETENCY LISTING

////////////////////////////////XXXXXXX\\

CURRENT RECORD

03/27/85
WINTER
WLD 102 1
OBJ 2

////////////////////////////////XXXXXXX\\

NAME:

TEST 1:	85.00	TEST 2:	0.00
TEST 3:	0.00	TEST 4:	0.00
TEST 5:	0.00	TEST 6:	0.00
TEST 7:	0.00	TEST 8:	0.00
TEST 9:	0.00	TEST 10:	0.00
TEST 11:	0.00	TEST 12:	0.00
TEST 13:	0.00	TEST 14:	0.00
TEST 15:	0.00	TEST 16:	0.00
TEST 17:	0.00	TEST 18:	0.00
TEST 19:	0.00	TEST 20:	0.00

COMPOSITE: 85.00 SKILL LEVEL:

COMPETENCY LISTING

////////////////////////////////////XXXXXXX\\

CURRENT RECORD 03/27/85
WINTER
WLD 102 1
OBJ 3

////////////////////////////////////XXXXXXX\\

NAME:

TEST 1:	87.00	TEST 2:	0.00
TEST 3:	0.00	TEST 4:	0.00
TEST 5:	0.00	TEST 6:	0.00
TEST 7:	0.00	TEST 8:	0.00
TEST 9:	0.00	TEST 10:	0.00
TEST 11:	0.00	TEST 12:	0.00
TEST 13:	0.00	TEST 14:	0.00
TEST 15:	0.00	TEST 16:	0.00
TEST 17:	0.00	TEST 18:	0.00
TEST 19:	0.00	TEST 20:	0.00

COMPOSITE: 87.00 SKILL LEVEL: 2

COMPETENCY LISTING

////////////////////////////////////XXXXXXX\\

CURRENT RECORD

03/27/85
WINTER
WLD 102 1
OBJ 4

////////////////////////////////////XXXXXXX\\

NAME:

TEST 1:	75.00	TEST 2:	0.00
TEST 3:	0.00	TEST 4:	0.00
TEST 5:	0.00	TEST 6:	0.00
TEST 7:	0.00	TEST 8:	0.00
TEST 9:	0.00	TEST 10:	0.00
TEST 11:	0.00	TEST 12:	0.00
TEST 13:	0.00	TEST 14:	0.00
TEST 15:	0.00	TEST 16:	0.00
TEST 17:	0.00	TEST 18:	0.00
TEST 19:	0.00	TEST 20:	0.00

COMPOSITE: 75.00 SKILL LEVEL:

////////////////////////////XXXXXXX\\\

APPENDIX C

MAKING A HARD COPY OF THE PROGRAM

Step 1. Insert CP/M disk in drive A.

Step 2. Insert program disk in drive B.

Step 3. Turn on printer.

Step 4. Hold down control key and press letter P to send screen output to printer.

Step 5. Turn on printer and be sure there's paper in it.

Step 6. Type DIR B: -- Printer will print list of files on program disk.

Step 7. Hold down control key and type P to stop sending output to printer.

Step 8. Now use PIP PRN:= to print out program listing. Print each file designated PRG.

Type PIP - an * will appear on the screen

Print each file separately as follows:

```
* PRN:=MAINMENU.PRG
* PRN:=SETMENU.PRG
```

and so on . . .

The entire program is almost 8000 lines and takes up almost 200 pages.

It is a good idea to do a form feed on the printer before printing each file so that the printing begins at the top of the page.

The PIP PRN: command automatically ejects a page before it begins to print.

When you're finished enter Return to leave PIP program.